

NASA Global Hawk- Lessons Learned

Aircraft, Staffing, Operations

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HS3 Science Team Meeting
April 29, 2014





Significant First's in 2013



- **First Dual GH Aircraft Deployment**
 - Both aircraft arrived at WFF on schedule
- **First Use of the Wallops GHOC-E Facility**
 - Including several Wallops Pilots
- **First use of “no Hard Down Day” Crew Staffing & Scheduling**
- **First Back-to-Back Flights (with 2 hrs between flights)**
 - Accomplished “3” Back-to-Back’s
- **Dedicated GH (Pilot) Flight Planner to allow more flexible and responsive Flight Planning**



Lessons Learned - Aircraft



- Fuel – need “low freeze point” fuel
 - AV-1 flight to Gulf of Mexico shortened due to fuel temp
 - * **Low Freeze Point Fuel has been identified and is being procured**
- On-board Camera functionality
 - Need improvements with Low-light Nose Camera
 - Need improvements to de-icing on HDVis
 - Need HDVis “equivalent” on AV-1 with HIRAD
 - * **Work is ongoing in all three areas**
- Aircraft Spares supply brought to WFF
 - * **OM & OA Spares Lists are being independently vetted**
- Required Aircraft, “Keys”, Maint. & GHOC S/W Caused Issues
 - * **Vehicle Maint. Review in progress and will be scheduled**
 - * **All other items being reviewed to be flight ready at Start of HS3**



Lessons Learned – Staffing/Op's



- GH Data-IT Support couldn't support Post-flight on Back-to-Back's
 - * **One additional Data-IT position being added throughout Mission**
- Deintegration at AFRC delayed due to GH Staffing shortage
 - * **GH AFRC Staffing being scheduled through Deintegration Period**
- Use of DFRC GHOC for each flight complicated Staffing Management
 - * **More Pilots and Mission Planners being brought to WFF for duration of HS3**
 - * **Intent is to use GHOC-E for Entire Mission in most cases**
 - * **GHOC at AFRC will have Staff to Support HS3 if needed**
- GHOC-E "POR" Plasma Displays didn't show Pilot Displays
 - * ***One additional Plasma Display being added***
 - * ***Pilot PFD and Map Displays will be shown in the GHOC-E POR***



Lessons Learned – Staffing/Op's



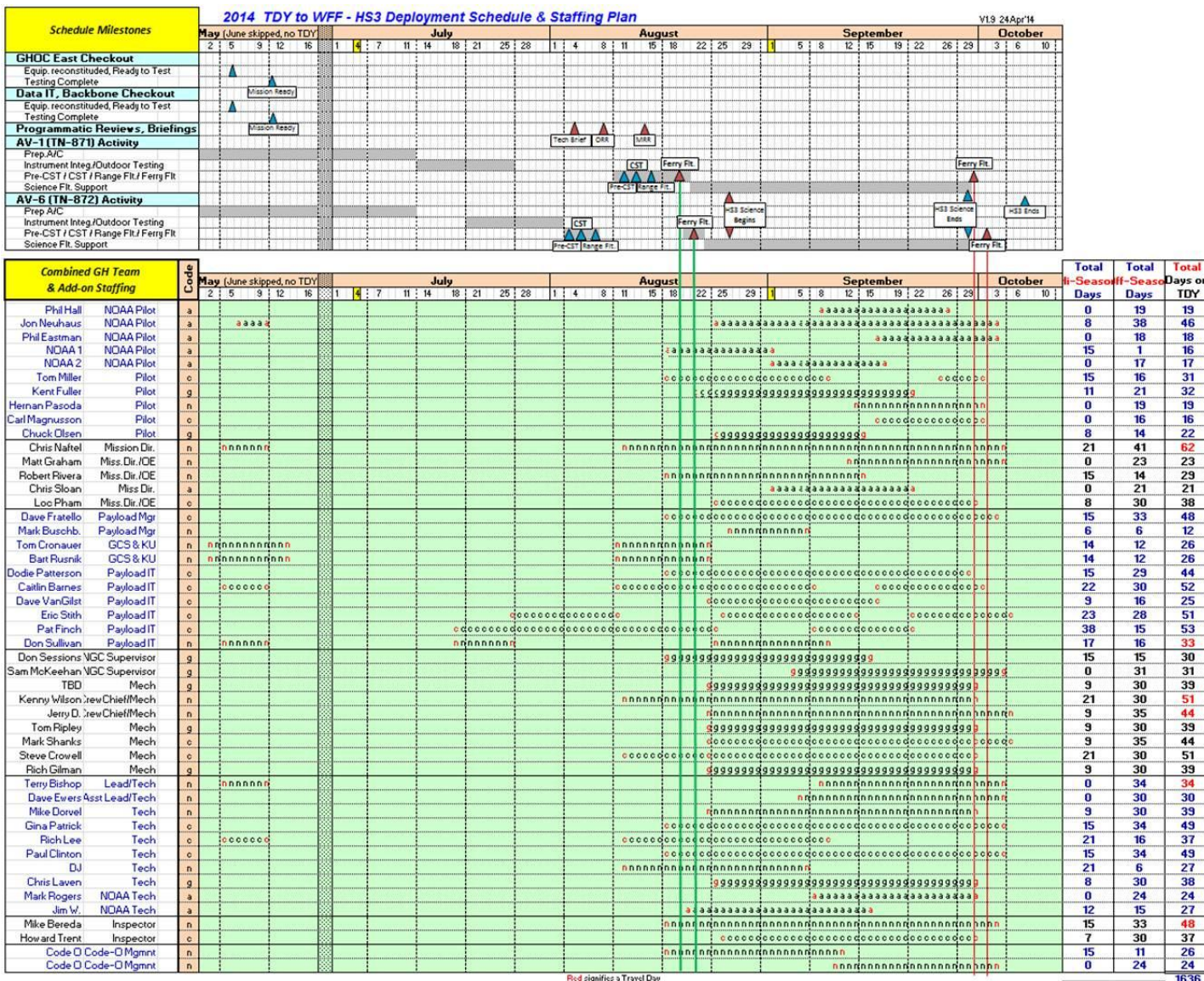
- Pilot Flight Planning, VACAPS, Mission Routing items
 - * *GH Pilots Jon Neuhaus and Hernan Posada have discussed current plans for 2014.*
- AV-1 “Over Storm” Aircraft was degraded in altitude vs time profile
 - Most noticed during the Gulf of Mexico Flight
 - * *Mark Buschbacher has discussed ongoing analysis and options*



Lessons Learned - Staffing

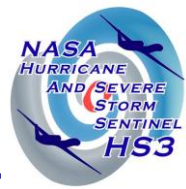


AFRC GH Deployed Staff at WFF for 2014: ~1635 “Man/Days” – increase of 320 from 2013.





Lessons Learned – Others



- **Ku SatCom downlink Data Rate in Gulf of Mexico was too low**
 - * **Data Rate with SatMex Satellite will now match Atlantic Service**
- **AVAPS RF Issue**
 - * **Appears to have been resolved with new Z-65 Antenna**
- **HIRAD RF Issue**
 - * **GH Team continues to support HIRAD questions and will support any need for Testing during Integration in July/Aug '14**
- **HIRAD Temperature Issue**
 - * **GH Team will attempt to support if a requirement is established.**
 - * **Cooling Inlet/Exhaust possible on metallic mid-fairing**
- **CPL Over-land Operations**
 - * **3014 FAA LOD repeats last year's success with Laser Op's in R2508 and during over-land flight to Gulf of Mexico.**
 - * **There continues to be a limitation for no Laser if <FL530**

